

Infectious Diseases

Assignment Description:

Although this position will have a main focus on infectious disease, the Fellow will be given the opportunity to pursue projects related to chronic disease and injury epidemiology if desired. Physically located with the disease investigation and intervention team, the Fellow would participate in responding to outbreaks of reportable diseases, both foodborne and nonfoodborne. These responses would include some field work. The Fellow will be given the opportunity to lead at least one outbreak investigation. Although the Fellow would be enlisted to help respond to specific urgent or important public health response needs, the majority of projects undertaken during the fellowship could be selected based on the Fellow's areas of interest.

Examples of recent infectious disease-related projects undertaken by Office of Epidemiology staff and trainees include

- study of vaccination coverage in Clark County public schools
- evaluation of the effectiveness of using a reverse-sequence syphilis testing protocol
- evaluation of Coroner's data as a surveillance system for pedestrian fatalities
- managing and evaluating surveillance systems for respiratory disease in pediatric and adult hospitalized patients
- analyzing Hepatitis A trends in Clark County to enable the health district to make an evidence-based decision regarding its vaccination program

Day-to-Day Activities:

Initially, the Fellow will work with the disease investigation team to develop a foundation of knowledge about reportable diseases and their prevention. A surveillance system evaluation will be started simultaneously. The Fellow will be introduced in Year 1 to responding to calls from the public and taking after-hours call duty. The Fellow will be an active participant in outbreak investigations and will get to lead at least one. As the Fellow develops more competence in disease investigation, his/her focus will be modified, with more time devoted to other projects. During Year 1, the Fellow will be encouraged to select and begin one or more epidemiologic studies which can be pursued concurrently with routine day-to-day activities. Evolving public health issues create opportunities for the health district to communicate with the medical community and others through technical bulletins or notices distributed through the Health Alert Network. The Fellow would be encouraged to develop one or more of these communications. Opportunities will also exist to author one or more article for submission to a peer-reviewed journal. Health District staff members are frequently called upon to deliver presentations to audiences of lay persons as well as academic or scientific audiences, to do media interviews, and to speak at scientific conferences. The Fellow would be encouraged to respond to some of these requests. The Fellow will be given the opportunity to be exposed to other activities within and outside the health district, such as participating in grant development or grant application reviews, attending multi-agency meetings such as the child death review team or immunization coalition meetings, and accompanying environmental health inspectors on field visits. These activities can sometimes lead to ideas for epidemiologic studies and other collaborative projects.

Potential Projects:

Perform analysis on death certificate data to characterize the population of deceased persons who died from infectious causes, identify associated factors, determine whether there are opportunities for the health district to develop interventions to prevent these.

Use hospital discharge data to characterize healthcare-associated infections in Clark County hospitals.

Evaluate respiratory surveillance among ICU patients – is this surveillance effectively identifying which respiratory pathogens are circulating in the community?

Evaluate salmonellosis surveillance – the district discontinued its policy of routinely performing full investigations on reported salmonellosis cases several years ago, performing these only if PFGE matches with other patients (indicating a possible epidemiologic link) are identified through PulseNet. Previously, at the cost of additional staff time, routine investigations sometimes helped us identify secondary salmonellosis cases. We wish to know whether case counts decreased appreciably since our policy change and now, when we learn of PFGE matches, whether the delay in interviewing patients has resulted in a decreased ability for patients to recall possible exposures. In short, has the net effect of this policy change been beneficial or detrimental?

The Las Vegas metropolitan area is home to 15 of the world's 25 largest hotels (according to Wikipedia), presenting unique challenges and opportunities for public health. Projects related to the hotel industry include:

1. The health district implemented new guidelines for responding to legionellosis cases associated with Las Vegas area hotels and resorts with the requirement for remediation after single cases are identified rather than only after outbreaks. Evaluation of the effectiveness of these new guidelines could be performed. This project would likely involve consultation with subject matter experts at CDC.
2. The health district developed hotel-focused guidelines several years ago for prevention of and response to norovirus outbreaks. A study could be performed to evaluate of the effectiveness of the implementation of these guidelines.

Finally, projects outside the area of infectious disease could be performed. For example, hospital discharge data, the Coroner's database, and/or death certificate data could be used to study particular types of injuries, such as falls among the elderly, unintentional childhood injuries, or prescription medication-related deaths, and potentially lead to development of interventions.

Preparedness Role

The health district can facilitate the opportunity for the Fellow to gain basic and advanced ICS certification. Participation in tabletop and other public health preparedness activities will be encouraged. The health district's Office of Public Health Preparedness coordinates such activities several times each year, either within the district or in conjunction with outside agencies, such as the Las Vegas Metro Police, local hospitals, the McCarran International Airport, the Clark County School District, etc.

Assignment Location:	Las Vegas, NV
Primary Mentor:	Nancy Williams, MS, MD, MPH Senior Scientist Southern Nevada Health District
Secondary Mentor:	Brian Labus, MPH Senior Epidemiologist Southern Nevada Health District

